

# The outlook for natural colours in India

Understanding the key  
challenges and opportunities

July 2024





**INDIA**  
WHITE PAPER

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Colour significantly shapes consumer preferences for food and drink. It serves as a crucial sensory cue that influences quality and flavour expectations while enhancing the overall consumption experience.

In the last century, artificial colours were predominantly used as additives to colour products in foods and beverages. However, the market for natural colouring solutions is now growing fast and outperforming the artificial colour market worldwide (see below chart Global natural colour market in 2023 in (€m) for food and beverages applications).

In India, the heavy reliance on artificial colours persists; however, as this White Paper explains, several indicators suggest significant growth in the adoption of natural colouring solutions.

In this White Paper, the Natural Food Colours Association (NATCOL) provides new insights into the Indian market. It features both consumer and market research, highlighting the challenges and opportunities ahead for natural colouring solutions.

## An introduction to natural colours

The term 'natural colours', or 'natural colouring solutions', can encompass both natural colouring matters (defined as additives) and Colouring Foods (defined as ingredients used for colouration).

**Natural colouring matters** are natural colouring principles (pigments) derived from plant, animal, mineral or microbiological sources, obtained via traditional and/or suitable processing, including those produced to be identical to those found in nature. The term 'natural colouring matters' excludes artificial colours, which are not derived from natural sources or found in nature. Some examples of natural colouring matters include curcumin from turmeric, annatto from annatto seeds and chlorophyll from green leaf plants.

**Colouring foods** are concentrates made from edible raw materials. The term refers to products made from fruits, vegetables, spices, herbs and other edible source materials (e.g. spirulina) that are normally consumed as such or used as characteristic ingredients of food. The colour is obtained from the raw materials using physical methods such as chopping and crushing as well as water or a permitted food-grade solvent. In addition, the pigments must not be selectively extracted. Some examples include 'black carrot concentrate' and 'sweet potato concentrate'.

Both natural colouring matters and colouring foods can provide viable alternatives to artificial colours in all types of food and drink.

## About NATCOL

The Natural Food Colours Association (NATCOL) is the go-to organization for natural colors and coloring foods worldwide to grow customers and consumers' choice. It represents companies and associations which provide natural food colors and/or coloring foods for the food, feed and related industries. By so doing, NATCOL offers the appropriate forum for companies located all around the world to exchange on regulatory and scientific topics on natural colors and coloring foods.

NATCOL has members working in many key international markets and now has a dedicated task force for India. The Working Group India is focusing on the current regulatory landscape in the country through which it aims at promoting natural colouring matters and colouring foods in line with evolving customer and consumer demand.

## Natural colours on the rise worldwide

Artificial colours for food and drink were first developed in the 1850s. Since then, they have been used to replace colour lost during processing or storage as well as enhancing the appearance of products that were colourless or otherwise lacked visual appeal.

The need for colour remains as strong as ever, but there has been rising global concern about the health impacts of artificial colours. A recent FMCG Gurus survey found that **three-quarters of consumers worldwide say it is important that food and drink products do not contain artificial colours.**<sup>1</sup>

There is now a clear trend towards natural colours in many parts of the world. Europe was the first region to shift drastically away from artificial colours. This was made possible due to technical advances in natural colours, but the EU has also introduced several important regulatory changes:

- Since 2010, following the publication of the so called ‘Southampton Study’, precautionary labelling has been required for six artificial colours stating they ‘may have an adverse effect on activity and attention in children’.
- Brands using natural colours can use front-of-pack declarations such as ‘no artificial colours’ providing it does not mislead the consumer.
- Colouring Foods are classified as food ingredients rather than additives. They were initially defined under the European Commission’s Guidance Notes on the classification of food extracts with colouring properties of 2013. In 2021, the NATCOL ‘Code of Practice for the Classification, Manufacturing, Use and Labelling of Colouring Foods (EU)’<sup>2</sup> was established as a more comprehensive document.

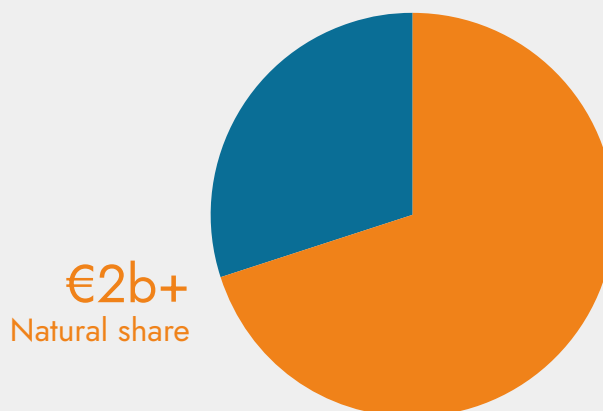
Europe’s successful move to natural colours has helped increase uptake in many other markets worldwide - particularly those with higher per-capita income levels such as USA, Japan, South Korea and Australia.

<sup>1</sup> FMCG Gurus ‘Flavour, Colour & Texture: New Flavours are Sparking Consumer Interest’ (November 2022) [www.fmccgurus.com](http://www.fmccgurus.com)

<sup>2</sup> [www.natcol.org/wp-content/uploads/2021/09/NATCOL\\_CodeOfPractice\\_FullDocument\\_23\\_09\\_2021.pdf](http://www.natcol.org/wp-content/uploads/2021/09/NATCOL_CodeOfPractice_FullDocument_23_09_2021.pdf)

As a result, the natural colours market is now significantly larger than that for artificial colours. Based on data from IMARC<sup>3</sup> and Future Market Insights<sup>4</sup>, NATCOL estimates that the global market for all types of food colours was worth between €2.5 to €3 billion in 2023, with natural colours making up more than 70% of the total.

## Natural share of global food colour market



Source: Import and Exports statistics, [www.comtrade.un.org](http://www.comtrade.un.org) / FDA Colour Certification Reports | FDA / ChatGPT / Summary of Natural Food Colours Market Size, Growth, Trends, Forecast 2022-2027 ([www.imarcgroup.com](http://www.imarcgroup.com)) / Summary of Natural Food Colours Market Size, Share, Trend by 2033 | FMI ([www.futuremarketinsights.com](http://www.futuremarketinsights.com))

Remark: numbers according to the current market conditions. Changes in regulations, etc. will require figures revision. The estimated growth and size are representative and NATCOL does not take responsibility on data usage.

The estimate also indicates that the **natural colours market is likely to experience a compound annual growth rate (CAGR) of 5-7% in the period from 2023 to 2025.**

<sup>3</sup> Natural Food Colors Market Report by Product (Curcumin, Carotenoids, Anthocyanins, Carmine, Caramel, Copper Chlorophyllin, and Others), Form (Liquid, Powder, Gel), Application (Processed Food, Meat and Savories, Beverages, Baked Products, and Others), and Region 2024-2032 [www.imarcgroup.com/natural-food-colors-market](http://www.imarcgroup.com/natural-food-colors-market)

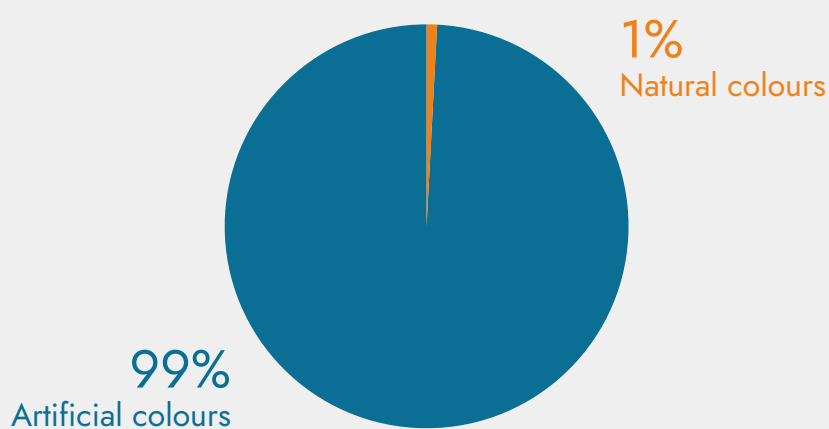
<sup>4</sup> Natural Food Colors Market Outlook 2023 to 2033 [www.futuremarketinsights.com/reports/global-natural-food-colours-market](http://www.futuremarketinsights.com/reports/global-natural-food-colours-market)

## Artificial colours dominate in India – for now

Indian home cooking is known for vibrant dishes and confections that are created using colourful spices and other natural ingredients.

Despite this, the vast majority of colours used in India's packaged food and drink are artificial. There has been minimal adoption of natural colours at any level, from major brands to local bakeries and restaurants that produce packaged goods for local distribution.

Estimated use of artificial and natural colours in Indian food & drink industry



Source: Confederation of Indian Industry (CII)

The prevalence of artificial colours has been largely down to two factors: cost and performance.

Switching from artificial colours to natural ones in food and beverage production offers several benefits. Natural colours align with consumer preferences for healthier options and enhance product appeal. Accepting the requirement for greater care during storage, handling, and processing, the transition may result in increased costs, depending on the specific product. However, this cost increment is offset by the considerable advantage of delivering a more consumer-friendly product. Manufacturers of natural colours are well-positioned to offer technical support to ensure optimal performance throughout the shelf-life of the final product.

Despite the heavy reliance on artificial colours, there are strong indications as explained below that **natural colours are now primed for significant growth in India.**

**Innovation in the natural colours space** has significantly narrowed the gap to artificial colours in terms of vibrancy, stability, ease of use and cost. In addition, the **physical infrastructure** of supply chain and retail in India is becoming more organised and sophisticated every year.

The underlying driver for the switch to natural colours, though, is always **consumer demand** – and research shows preferences and awareness are changing dramatically.

## Modern Indian consumers want natural colours

Until recently, India had relatively low per-capita income, urbanisation levels and educational attainment. This had resulted in a food and beverage ecosystem in which cost-reduction was the only route to survival.

But this situation is changing. India's growing urban and semi-urban demographic group will soon represent the majority of the population and these consumers have experienced a jump in income and educational levels compared to earlier generations.

The Confederation of Indian Industry (CII) commissioned independent research agency NielsenIQ to survey 2,000 urban Indian respondents on their attitude towards food colourings in beverages, dairy, baked goods, and confectionery.<sup>5</sup>

The results demonstrated that there is both strong awareness and underlying demand within the Indian market for natural colours.

### – High awareness

**82%** of respondents are **aware** that foods and beverages contain added food colours

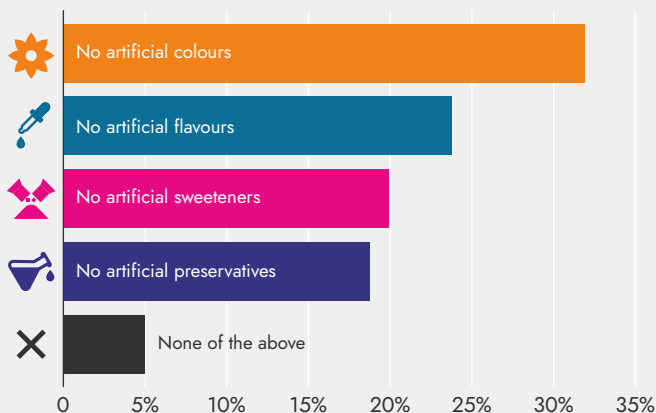
### – Price premium

**84%** of respondents say they are likely to pay a **price premium** to purchase products made with natural food colours, rising to **89% of Indian mothers**

### – Labelling

'**No artificial colours**' is the claim that appeals the most to respondents (32%), ahead of 'no artificial flavours' (24%), 'no artificial sweeteners' (20%), 'no artificial preservatives' (19%) and 'none of the above' (5%)

Which of the following claims on packaging appeals to you the most?



<sup>5</sup> Men and women aged 18-45 years from NCCS A, B & C (margin of error 2% at 95% CI). The research was conducted via an online questionnaire (for NCCS A & B respondents) and computer-aided telephone interviews (for NCCS C respondents) from January to February 2022



## Labelling: Opportunities for improvement

Label declarations and front-of-pack information will play an important role in helping natural colours become mainstream in India.

The following table highlights some of the commonly used artificial colours that are permitted by the Food Safety and Standards Authority of India (FSSAI) as well as the natural alternatives, including both natural colouring materials (additives) and Colouring Foods. The specific alternative will depend on the final product and processing, with advice being available from suppliers of such natural colours.

Desired shade	Commonly used artificial colours	Corresponding natural colouring materials	Corresponding Colouring Foods (as concentrates)
Yellow to orange	Tartrazine, Sunset Yellow	Curcumin/Turmeric, Lutein, Beta-Carotene	Safflower, Pumpkin
Orange to red	Sunset Yellow, Erythrosine	Beta-Carotene, Paprika, Annatto, Lycopene	Carrot, Paprika
Red to pink	Allura Red, Carmoisine	Beet Red, Anthocyanins, Lycopene	Black Carrot, Beetroot, Hibiscus, Radish
Pink to blue	Ponceau 4R, Indigo Carmine, Brilliant Blue	Anthocyanins, Grape Skin	Purple Sweet Potato, Spirulina*
Greens	Fast Green, Brilliant Blue, Tartrazine	Chlorophyll, Chlorophyllins	Spinach, Safflower, Spirulina*
Others		Caramel (Brown), Carbon (Black)	Caramelised Sugar, Malt

\*The current Indian Standard for Colouring Foods does not include spirulina. However, NATCOL advocates for its inclusion noting that it is classified as a Colouring Food in Europe and within the scope of NATCOL's Code of Practice

Previously, there was a requirement for manufacturers to declare the actual colour used as either artificial or natural. However, this is no longer the case. The current requirement and practice involve manufacturers providing no further clarification for the consumer as to whether added colours are artificial or natural, which makes it difficult for them to make an informed choice.

The Confederation of Indian Industry (CII) survey showed many Indian consumers significantly prefer natural colouring solutions. As such, there is a definite need to provide clearer information on the type of colour used in all food and drink products.

In 2020, the FSSAI embraced the principle of Colouring Foods. It published a standard that defines them as food ingredients that are used for the primary function of colouring and that are not considered as food additives. This allows for simpler label declarations such as:

Ingredients: Sugar, glucose syrup, citric acid, flavouring, colouring foods (carrot and radish concentrate)

**Ingredients:** Sugar, glucose syrup, citric acid, flavouring, colouring foods (carrot and radish concentrate).

While this was a positive step, work still needs to be done to give consumers greater clarity about the types of colouring used in their products.

This can be achieved by requiring manufacturers to **list the specific colour used** within the ingredient declaration in all instances.

Allowing for **front-of-pack claims** such as ‘no artificial colours’ – which the CII study highlighted as the claim of greatest interest to Indian consumers – would significantly help with product selection. An alternative claim could be ‘colour from natural sources’. In Europe, using a ‘no artificial colours’ or ‘with natural colours’ claim is standard industry practice however it should not mislead consumers.

‘No artificial colours’ claims are widely used on the front of packaging in Europe

✓ **No artificial colours**

To support this objective, NATCOL advocates for the FSSAI to formalise a definition for natural colouring matters (as outlined on page 2). In addition to the standard on Colouring Foods, this would help to provide consumers with clear and understandable information. In the case of artificial colours, these are already very well defined and with appropriate labelling it would be clear if they are present in any given food product.

## New possibilities for Indian farmers

India is already a major global producer of many of the botanical raw materials used to create natural colouring matters. Examples include:

- Paprika (Paprika oleoresin)
- Turmeric (Curcumin)
- Marigold (Lutein)

The mainstreaming of natural colours in India would not only boost the domestic agricultural market in terms of volume but also with regard to specialisation and value addition. There are hundreds of thousands of farmers in India growing some of the raw materials used to produce natural colours. The growth of a domestic natural colours industry will open up opportunities to differentiate and specialise in these crops with an aim to maximise pigment yield.<sup>6</sup>

This will provide farmers with access to a more sophisticated market that would reward them for the added value, liberating them from an outmoded value chain based on low returns.

### An emerging biotechnology community

In addition, India seems to be emerging as a world leader in biotechnology. According to a recent statement from the ministry of science and technology,<sup>7</sup> India hosts already more than 6500 start-ups and is determined to play its role in addressing the needs of a growing world population.

Bio-production of natural pigments through fermentation is just another means to grow the market, serve the needs of Indian consumers, and contribute to a thriving Indian economy.

<sup>6</sup> Socio Economic Report on Chilli by IFEAT [www.ifeat.org/wp-content/uploads/2021/06/socio-economic\\_chilli.pdf](http://www.ifeat.org/wp-content/uploads/2021/06/socio-economic_chilli.pdf) Outlook Report on Turmeric by ANG Ranga Agricultural University [www.angrau.ac.in/downloads/AMIC/OutlookReports/2021/10-TURMERIC%20-%20January%20to%20December%202021.pdf](http://www.angrau.ac.in/downloads/AMIC/OutlookReports/2021/10-TURMERIC%20-%20January%20to%20December%202021.pdf)

<sup>7</sup> [www.outlookindia.com/national/india-is-emerging-as-world-leader-in-biotechnology-jitendra-singh-news-340925](http://www.outlookindia.com/national/india-is-emerging-as-world-leader-in-biotechnology-jitendra-singh-news-340925)

## The outlook for India

There are many reasons to believe India can become a major market for natural colours in the not-too-distant future. These include:

- The size and growth of the population
- Urbanisation and increases in disposable income
- Consumer expectations for colourful food and drink and natural ingredients
- Better-performing natural colour solutions as the result of ongoing innovation across the industry
- Developments in the regulatory environment relating to natural colours

The potential is huge, but there are key triggers needed to shift the market in this direction.

To meet Indian consumers' expectations, natural colours need to deliver vibrant shades comparable to those from artificial colours. Suppliers must therefore provide food manufacturers not only with high-quality natural colours but also training and technical support.

Natural colours have a higher cost-in-use than artificial colours. However, as the European market has shown over a long period of time, this is outweighed by their ability to deliver on consumer preferences for natural ingredients. This factor needs to be harnessed with clearer label declarations including front-of-pack claims. The work that NATCOL undertakes in the regulatory space is vitally important to pave the way for these developments.

There is work still to be done. Nonetheless, many of the conditions are already in place for natural colours to become established as the preferred choice for Indian manufacturers and consumers alike.

If you have any questions, please contact the NATCOL secretariat: [secretariat@natcol.org](mailto:secretariat@natcol.org)

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